TECHNICAL NOTES
of the
STN PUB ALASKA FOREST RESEARCH CENTER
U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

No. 13 JUNEAU, ALASKA

Girdling and Poisoning of Live Culls

Poisoning live culls in the climax pulptimber stands was found to be faster and easier than girdling with a chain saw or axe. The time difference between methods is not the most important over-all time factor. Traveling between trees and clearing brush from around the trees require more than half of the total time.

Large fluted hemlocks and large cat-faced cedars are difficult to girdle but are as easy to poison as normal trees of the same size. Trees on steep or brushy slopes are difficult to treat by any method but can usually be poisoned with less difficulty than they can be girdled.

The treatment time for the three methods increased with tree diameters. Girdling time increased at a faster rate than poisoning time for trees over 20 inches dbh. Hemlock larger than 30 inches dbh required more time to girdle or poison than cedar of the same diameter. This was due to the thick bark and deep flutes of the large hemlock trees.

One pound of Ammate (ammonium sulfamate) treated 16 square feet of basal area, or about five 25-inch trees. Cups were chopped 1 to 2 inches into the sapwood 8 inches apart around the tree and approximately one tablespoon of Ammate was placed in each cup. Most of the poison was absorbed by the tree within 24 hours.

Merchantable pulptimber stands in Southeast Alaska have about 15 live culls per acre with an average dbh of 25 inches. These and other residual trees may be girdled or poisoned after logging to eliminate them as competition to the more desirable second-growth stands.

This study was located in the Kasaan Bay area of the Ketchikan Pulptimber Unit. Nine one-acre plots were treated during October of the 1950 field season, three by each method. Table 1 summarizes the treatment times by five-inch diameter classes.

Table 1.--Relation of dbh to time and method of treatment.

Diameter	Poison 1/		Axe		Saw and Axe	
	No.	Av. Time	No.	Av. Time	No.	Av. Time
8-12	4	1.5	1	1.5	7	1.9
13-17	4	2.4	3	1.3	8	2.4
18-22	4	3.8	7	4.0	6	3.8
23-27			7	6.0	9	4.9
28-32	2	6.0	4	5.4	4	7.8
33-37			6	7.8	1	7.5
38-42	1	6.0	5	6.7	4	8.8
43-47			1	19.0	2	17.0

1/ Excludes trees from two plots for which treatment times were not recorded separately.

March 1951

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GPO 985317